

s, chitinous shield; *k*, crown. The soft part of the head is wanting.

Fig. 3. The portion of the *Lernæodiscus* which is situated within the *Porcellana*, magnified 25 diameters: *b*, chitinous lamellæ; *k*, crown; *w*, roots.

Fig. 4. *Sacculina purpurea*, magnified 3 times: A, from below; B, from the right side; *a*, *b*, *k*, as in fig. 2.

Fig. 5. The portion of the *Sacculina* situated within the *Pagurus*, magnified 15 diameters: *k*, crown; *w*, roots.

Fig. 6. Earliest larval state of *Lernæodiscus*, from beneath, magnified 180 diameters.

Fig. 7. Earliest larval state of *Sacculina*, from above, magnified 180 diameters.

BIBLIOGRAPHICAL NOTICES.

Manual of British Botany. By CHARLES CARDALE BABINGTON, M.A., F.R.S., F.L.S. &c., &c., Professor of Botany in the University of Cambridge. Fifth Edition, with many additions and corrections. London: Van Voorst, 1862.

THE 'Manual of British Botany' continues to maintain a steadily progressive character. Every page of the new edition bears witness to the industry and care of its author, and to his endeavour to keep pace with the advance of botany on the European continent. The Synopsis of Orders has been altogether remodelled, and is now arranged on the analytical or dichotomous plan so much used by French botanists. The descriptions of several of the more difficult genera and species have been re-written. Many improvements have also been made in defining the places of growth and range of the plants; and we meet with a welcome addition in the form of a glossary of botanical terms, which, like the accents now placed over the Latin names, will no doubt be found very serviceable.

Professor Babington thus announces his botanical creed:—"An attempt has recently been made greatly to reduce the number of our native species. The results seem to be so totally opposed to the teaching of the plants themselves, and the evidence adduced in their favour is so seldom more than a statement of opinion, that they cannot safely be adopted. Also, it has been laid down as a rule by some botanists that no plant can be a species whose distinctive characters are not as manifest in a herbarium as when alive. We are told that our business as descriptive botanists is not 'to determine what is a species,' but simply to describe plants so that they may be easily recognized from the dry specimen. The author cannot agree to this rule. Although he, in common with other naturalists, is unable to define what is a species, he believes that species exist, and that they may often be easily distinguished amongst living plants, even when separated with difficulty from their allies when dried specimens only are examined. He also thinks that it is our duty as botanists to study the living plants whenever it is possible to do so, and to describe from them—to write for the use of field- rather than cabinet-

naturalists, for the advancement of a knowledge of the plants rather than for the convenience of the possessors of herbaria—also that the differences which we are able to describe as distinguishing plants being taken from their more minute organs, is not a proof that they constitute only a single species. It seems to be our business to decide upon the probable distinctness of plants before we attempt to define them; to make the species afford the character, not the character form the species" (preface, pp. iii. iv). That our author is no servile follower of the school of Messrs. Jordan and Boreau is sufficiently proved by a remark which occurs a few pages further on, where the writings of these eminent botanists are recommended as "valuable for the study of varieties, for many of their species can claim no higher rank;" and this is coupled with the useful caution that "it is necessary to warn students against the very common error of supposing that they have found one of the plants described in a foreign flora, when in reality they have only gathered a variety of some well-known British plant. The risk of falling into such errors renders it necessary to consult such works as those of Messrs. Jordan and Boreau with great caution, lest we should be misled by descriptions, most accurate indeed, but rather those of individuals than species. Amongst plants so closely allied as are many of those called species in some continental works, it is scarcely possible to arrive at a certain conclusion without the inspection of authentic specimens" (preface, p. vii.). The moderate views thus taken by Professor Babington in the matter of species are further illustrated by the changes which have been introduced into the 'Manual' itself, where, if, on the one hand, we find a certain number of plants promoted to the rank of species, on the other we find some, which in former editions appeared as such, reduced to mere varieties.

Much attention has evidently been given to the subject of introduced plants; and we are glad to see the marks of naturalization more freely used than in any former edition. As in the 'Flora of Cambridgeshire,' three signs are employed for the different degrees of "certainly," "probably," and "possibly" introduced. A few of the agricultural weeds (e.g. *Ranunculus arvensis*, *Fumaria micrantha*, *Chrysanthemum segetum*, and all the species of the genus *Papaver*) are marked as possibly introduced; but we observe that most of the so-called "colonists" are still allowed to pass as native.

The following is a summary of the principal alterations made since the fourth edition:—

In the genus *Thalictrum*, *T. calcareum* (Jord.) is added as a variety of *T. minus* (L.); *T. saxatile* of former editions now appears as *T. Kochii* (Fries), while a new species is added under the name of *T. saxatile* (Schleich.). *Papaver Lecoqii* (Lamot.) is accepted as a species distinct from *P. dubium* (L.). Instead of *Fumaria capreolata*, we have now three species, viz. *F. pallidiflora* (Jord.) [to which *F. Boræi* (Jord.) is joined as a variety], *F. confusa* (Jord.), and *F. muralis* (Sond.). *Barbarea intermedia* is new to the British list, but is marked as possibly introduced. Under *Viola sylvatica* (Fries) are described two forms—a. *V. Reichenbachiana* (Bor.), and

β. *V. Riviniana* (Reich.), with the intimation that they are probably distinct species. *Moehringia trinervis* has been transferred to the genus *Arenaria*; *Arenaria leptoclados* (Guss.) takes its place as a species. The name *Hypericum anglicum* (Bert.) is still preferred to *H. elatum* (Ait.); but the plant is enclosed in brackets, as having very slender claims to be accounted British. *Ulex strictus* (Mackay) is reduced to a variety of *U. europæus* (Linn.). *Lotus tenuis* (Smith), which appeared as a species in the 'Flora of Cambridgeshire,' is once more joined to *Lotus corniculatus* (L.). *Lathyrus tuberosus* (L.) is added, with the brand of a possibly foreign origin. The genus *Rubus* has been thoroughly revised, and the number of species raised from forty to forty-five. *Dryas depressa* (Bab.) is reduced to a variety of *D. octopetala* (L.). *Lepigonum* now includes four species by the addition of *L. rupestre* (Kindb.) and *L. neglectum* (Kindb.). *Sedum purpureum* (Tausch) is now called *S. Fabaria* (Koch). *Galium parisiense* (L.) changes to *G. anglicum* (Huds.). *Galium elongatum* (Presl) is now included under *G. palustre* (L.). *Centaurea nigrescens* of former editions is reduced to a variety of *C. nigra*, under the name of *C. decipiens* (Thuill.). *Centaurea paniculata* (L.) adds another plant to those peculiar to the Channel Isles. Two *Hieracia* have changed name: *H. cerinthoides* is now called *H. anglicum* (Fries), and *H. stelligerum* becomes *H. floccosum* (Bachh.). *Cicendia Candollei* (Griseb.) is now *C. pusilla* (Griseb.). *Lycium barbarum* (L.) and *Veronica peregrina* (L.) are added to the list of naturalized plants. *Ajuga alpina* is removed, with the remark that the plant figured in 'English Botany' seems to be a slight variety of *A. reptans* (L.). *Polygonum laxum* of former editions becomes *P. nodosum* (Pers.). *Callitriche pedunculata* (DC.) changes to *C. hamulata* (Kütz.); *C. stagnalis* (Scop.) is allowed as British, but only in the form of a variety. *Parietaria erecta* of former editions is now considered a form of *P. diffusa*, the true *P. erecta* of Koch not having occurred in Britain. *Gladiolus illyricus* (Koch) is added, and appears as a true native of Hampshire. *Luzula Borreri* (Bromf.) is just noticed, as an abortive state of *L. pilosa* (L.). The plant mentioned as *Potamogeton gracilis* (Fries) is now referred to *P. pusillus* (L.); *P. sparganiifolius* (Laest.) takes its place as certainly identical with Fries's plant from Lapland. *Carex ericetorum* is new. *Poa polynoda* (Parnell) is united to *P. compressa* (L.). *Festuca ambigua* (Le Gall) is admitted. *Triticum pungens* (Pers.) is another addition to the Grasses. *Triticum laxum* (Fries) is changed to *T. acutum* (DC.).

Equisetum Telmateia (Ehr.) becomes *E. maximum* (Lam.). *Allosorus crispus* (Bernh.) is now called *Cryptogramme crispa* (R. Br.). *Woodsia hyperborea* (R. Br.) takes rank as a species distinct from *W. ilvensis* (R. Br.). The genus *Pseudathyrium* (Newm.) is now merged in *Polypodium*. *Lastræa remota* (Moore) is admitted as a variety of *L. spinulosa* (Presl). *Athyrium fontanum* is now placed in the genus *Asplenium*. *Asplenium acutum* (Bory) is reduced to a variety of *Asplenium Adiantum-nigrum* (L.). *Isoëtes echinospora* (Dur.) is new; *Isoëtes Hystrix* (Dur.) is also new.

The chief alterations and amendments which appear in this edition of the 'Manual' will be gathered from what has been already said, and from a study of the preceding analysis. It only remains for us to observe that there is no other work of the kind in which so great pains have been taken to bring the nomenclature of our English plants into conformity with that adopted on the Continent; and it will be seen that not a few of the changes which appear in the edition now before us have been introduced with this aim. We must also remark that in no other English book can we find the same care bestowed on the discrimination of closely allied species and varieties; and, whatever be thought of the respective value of the different forms, no one can doubt the importance of a careful and discriminating study of varieties, inasmuch as it is only by this means that we can hope to attain to a more exact knowledge of species.

It is by a careful and judicious attention to matters such as these that Professor Babington's 'Manual' has become identified with the progress of British botany; and we have no hesitation in saying that the present edition is in every respect calculated to sustain the high reputation in which its author is so deservedly held.

British Conchology; or, an Account of the Mollusca which now inhabit the British Isles and the surrounding Seas. Volume I. Land and Freshwater Shells. By JOHN GWYN JEFFREYS, F.R.S., F.G.S. &c.

Nine years have elapsed since the publication of Forbes and Hanley's 'History of British Mollusca'—a period brief indeed in the history of a science, but long enough to have added many species of Mollusca to our fauna, and of these no sufficient description has as yet been given. The elaborate treatise to which reference has just been made will probably remain for some time the chief illustrated work upon the subject. The high price, however, at which it was necessarily published unfortunately placed it beyond the reach of very many, who have thus been hitherto debarred from following up the study of British Conchology; while its bulk has stood in the way of its utility, and the student has felt the want of a portable volume which should be his companion at the sea-side. The aim of the author whose Manual we are about to review is to supply this want, as well as to bring the history of the Mollusca up to our present state of knowledge, and no one has equal facilities for undertaking and satisfactorily performing the task. Possessed of an unrivalled and well-nigh perfect collection of British shells, and having, moreover, a first-rate conchological library, Mr. Jeffreys has those materials at his own command which previous writers have been compelled to glean from various sources, or search for through the cabinets of many widely scattered collectors. Moreover, he has had upwards of thirty years' close study of his subject, and is thus thoroughly master of it, as is evidenced in the easy flowing style which characterizes that portion of his work which is now before us.

The volume is divided into two parts,—the first consisting of an